

A Synopsis of the Genera and Species of Museae.

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KEY TO THE GENERA.

* *Flowers hermaphrodite.*

1. **Heliconia.** Ovules solitary in the cells. Leaves not distichous. *Tropical America.*
2. **Strelitzia.** Ovules many in each cell. Leaves distichous. Petals very unequal, two connate in a sagittate blade with a narrow haft. *Cape Colony.*
3. **Ravenala.** Ovules many in each cell. Leaves distichous. Petals nearly equal. *Madagascar, Guiana, and North Brazil.*

** *Flowers unisexual.*

4. **Musa.** Flowers of the upper clusters male, deciduous. *Warmer regions of the Old World.*

Genus I. HELICONIA, Linn.

Flowers hermaphrodite. *Sepals* 3, lanceolate, equal; one free, the two others more or less adnate at the base to the corolla. *Petals* united in a unilateral tube which is 3-toothed at the top, and placed opposite the free sepal. Perfect *Stamens* 5, attached high up in the corolla-tube; filaments short; anthers linear, basifixed; sixth stamen represented by a small petaloid staminode

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placed opposite the free sepal. *Ovary* inferior, globose, 3-celled; ovules solitary in the cells, erect; style filiform; stigma capitate. *Fruit* indehiscent, often by abortion 2- or 1-celled. *Seeds* with an intruded testa, firm albumen, and straight embryo.—*Stem* erect, sheathed by the petioles of the non-distichous leaves. *Panicle* formed of several umbels of flowers, placed in the axils of the brightly-coloured lanceolate or ovate branch-bracts. *Flowers* various in colour. *Fruit* small, usually blue. Kuntze employs for the genus the name *Bihai*, used by Philip Miller in 1739 and Adanson in 1771.

Key to the Species.

Subgenus **Platyklamys**. Branch-bracts ovate-acuminate, deeply boat-shaped, as in *H. Bihai*.

Branch-bracts crowded on the rachis.

Branch-bracts ascending Sp. 1.

Branch-bracts spreading Sp. 2-5.

Branch-bracts spaced out on the rachis.

Branch-bracts very hairy Sp. 6-7.

Branch-bracts glabrous Sp. 8-12.

Subgenus **Stenochlamys**. Branch-bracts lanceolate-acuminate, shallowly boat-shaped, as in *H. psittacorum*.

Leaves large Sp. 13-20.

Leaves small.

Leaves green beneath Sp. 21-26.

Leaves purple beneath Sp. 27.

Leaves farinose beneath Sp. 28-29.

Subgenus **Platyklamys**.

1. **H. episcopalis**, Vell. Fl. Flum. III, t. 22; Peters. in Fl. Bras. III, pt. 3, t. 2; *H. Ferdinando-Coburgi*, Szys. in Wawra, Iter Princ. Sax.-Cob. II, 88, t. 5; *H. biflora*, Eich.; *H. thyrsoides*, Mart. Whole plant 6-7 ft. long. Leaves oblong, the lower 2-3 ft. long, 8-10 in. broad, rounded at the base, green and glabrous beneath. Peduncle long, stiffly erect, glabrous. Panicle dense, oblong, 3-4 in. long; branch-bracts 6-18, ovate, acute, bright red, glabrous, ascending, much imbricated, 2-3 in. long, 1½ in. round at base, deeply boat-shaped; rachis quite hidden. Flowers 2-6 in a cluster, whitish, under 2 in. long; pedicels

very short; flower-bracts hairy outside. Staminode minute. Brazil, *Blanchet*, 2971! *Glaziou*, 8496! New Granada, *Holton*, 211! *Triana*, 2647! Peru, *Haenke*.

2. **H. imbricata**, Baker; *Bihai imbricata*, Kuntze, Revis. Gen. 684. Whole plant 3-4 yards long, glabrous in all its parts. Leaves oblong, acute, 3-4 ft. long, a foot or more broad. Peduncle sub-erect, nearly a foot long. Panicle dense, conic, 8 in. long, half a foot broad at the base, 2 in. at the top; branch-bracts about 10 on a side, ovate, acute or acuminate, coriaceous, the lowest spreading horizontally, 4 in. long by 4 in. round at the base. Flowers many in a cluster. Costa Rica; Port Lemon, *Kuntze*, who proposes for the species with dense inflorescence a section named *Taenistrobus*.
3. **H. Mariae**, Hook. fil. in Journ. Linn. Soc. VII, 68; *H. elegans*, Peters. Whole plant 6-7 yds. or more long. Leaves oblong, long-petioled, 3-4 ft. long by a quarter as broad, rounded at the base, green and glabrous beneath. Panicle pendulous; peduncle stout, glabrous, above a foot long; branch-bracts 20-30 or more, slightly imbricated, ovate, glabrous, very coriaceous, deeply boat-shaped, all more or less reflexed, 2-3 in. long, 2 in. round above the base. Flowers red, 15-20 in a cluster, 1½ in. long; bracts glabrous; pedicels hairy. Staminode lanceolate. Fruit blue. New Granada, province of Bolivar, *Dr. Anthoine*!; Panama, *Wagner*, *Kuntze*. It was named, at the request of the discoverer, in compliment to the Empress of Russia.
4. **H. conferta**, Peters. in Fl. Bras. III, pt. 3, 13, tab. 3, fig. 2. Leaf oblong, rounded at the base, green and glabrous beneath, about 4 ft. long by a foot broad. Peduncle stout, pubescent; panicle nearly a foot long and broad; branch-bracts about 10, cordate-ovate acuminate, 4-5 in. long, 3-4 in. broad at the base, only an inch halfway up, crowded so that they hide the rachis, spreading, glabrous. Flowers 2 in. long, glabrous; flower-bracts oblique ovate. Guadeloupe, *Duchassaing*.
5. **H. Wagneriana**, Peters. in Fl. Bras. III, pt. 3, 13. Leaf oblong, green and glabrous beneath, 4 ft. long, nearly a foot broad, gradually narrowed to the base. Panicle 1½ ft. long by nearly a foot broad; rachis slightly flexuose, pubescent; branch-bracts close, ovate-acuminate, deeply boat-shaped, the lower 5-6 in. long, 3-4 in. round near the adnate base. Flowers

- many in a cluster; bracts ovate-oblong, glabrous. Panama, *Wagner*.
6. **H. villosa**, Klotzsch, in Linn. XX, 463; Peters. in Fl. Bras. III, pt. 3, t. 4. Whole plant 6–8 ft. long. Leaves oblong, green and glabrous beneath, 2–3 ft. long by nearly a foot broad, rounded at the base; petiole long, stout. Panicle pendulous from a curved stout peduncle which is densely clothed with soft brown hairs, deltoid, a foot long and broad; rachis flexuose, densely pubescent; branch-bracts ovate, deeply boat-shaped, densely hairy outside, spreading, the central ones 3–4 in. long, 2 in. round above the shortly adnate base, the lowest bract 5–6 in. long. Flowers many in a cluster, 2 in. long; bracts lanceolate, hairy, as long as the flowers. Staminode subulate, minute. Venezuela, *Moritz*, 250! *Fendler*, 1771! Brazil, *Sello*.
7. **H. vellerigera**, Poepp. Reise Chili, II, 295. Leaf unknown. Whole plant 6–7 ft. long. Panicle lax; rachis slightly flexuose, densely clothed with long soft brown hairs; branch-bracts ovate, deeply boat-shaped, densely pubescent, 4–6 in. long, above 3 in. broad above the base, narrowed suddenly above the middle. Upper Peru; province of Maynas, *Poeppig*.
8. **H. Bihai**, Linn. Syst. Veg. ed. XIII, 204; Andr. Bot. Rep. t. 640; Bot. Reg. t. 374; L. C. Rich. Comm. t. 8 and 10, fig. 1; Peters. in Fl. Bras. III, pt. 3, t. 5; *H. cariboea*, Lam.; *H. luteofusca*, *nigrescens*, and *variegata*, Jacq. Hort. Schoen. I, 25. Whole plant 8–20 ft. long. Leaves oblong, long-petioled, green and glabrous beneath, the lower 3–4 ft. long, nearly a foot broad. Panicle lax, erect or drooping, 1–2 ft. long; rachis glabrous, hardly at all flexuose; branch-bracts all arcuate-ascending, ovate acuminate, deeply boat-shaped, bright crimson, with a yellow edge, the lowest 5–6 in. long, 2½–3 in. round above the broadly adnate base. Flowers many in a cluster, whitish, 1½–2 in. long; bracts oblong-lanceolate, glabrous; pedicels short. Staminode oblong, acute. Throughout eastern tropical America from the West Indies to South Brazil. Venezuela, *Moritz*, 200! *Fendler*, 1490! Guatemala, *Donnell-Smith*, 1830! Panama, *Hayes*! Santa Marta, *Schlim*, 1000! New Granada, *Holton*! Introduced into cultivation in Europe from the West Indies in 1786. I cannot clearly

separate the Mexican *H. Bourgoeana*, Petersen (Bourgeau, 2502 l 2609 l), nor the Peruvian *H. Poeppigiana*, Eichler, both of which are fully described in Flora Brasiliensis. *H. indica*, Lam., *H. buccinata*, Roxb., *H. austro-caledonica*, Vieill., and *Heli-coniopsis amboinensis*, Miquel (Rumph. Amboin. V, t. 62, fig. 2), appear to be only cultivated forms of this species, of which I have seen specimens from New Caledonia, New Guinea, and the Solomon Islands. *H. aureo-striata*, Bull. Cat. 1881, 18, with woodcut, said to be from the South Sea Islands, is, I presume, a form of this with variegated leaves. *H. ? triumphans*, Hort. Linden., Ill. Hort. n. s. tab. 448, from Sumatra; and *H. ? striata*, Hort. Veitch., Flore des Serres, tab. 2416-7, said to have been received from New South Wales, are garden plants with variegated leaves, not known in flower. *H. ? leucogramma*, Hort. Van Houtte, proved to be a *Calathea*. *H. Seemanni*, Hort. Van Houtte, of which the leaves are figured in their catalogue for 1875-6, p. 183, may be also a form of *Bihai* with leaves variegated with white.

9. **H. humilis**, Jacq. Hort. Schoen. I, t. 48-49; Red. Lil. t. 382-3; Hook. fil. in Bot. Mag. t. 5613. Whole plant 4-5 ft. long. Leaves oblong, acute, long-petioled, green and glabrous beneath, 1½-2 ft. long, 4-6 in. broad at the middle, deltoid at the base. Panicle erect or drooping; branch-bracts few, spaced out on the pubescent flexuose rachis, ovate, deeply boat-shaped, glabrous, bright red with a narrow green edge, all more or less ascending, the lowest 4-6 in. long, 2-2½ in. round above the broadly adnate base. Flowers many in a cluster, greenish-white, 2 in. long; bracts glabrous, as long as the flowers. Staminode oblong, acute. Trinidad, *Purdie*, 41! *Fendler*, 806! 807! Upper Amazon, *Traill*, 815! Scarcely more than a variety of *H. Bihai*.
10. **H. pendula**, Wawra, Iter Max. 142, t. 21. Whole plant 8-9 ft. long. Leaves oblong, green and glabrous beneath, reaching a length of 4-5 feet and a breadth of a foot long. Panicle pendulous from a long curved peduncle, a foot or more long, half a foot broad at the base; branch-bracts spaced out on the very flexuose pubescent rachis, all except the uppermost reflexed, ovate, deeply boat-shaped, glabrous, bright red with a greenish-yellow margin, 3-4 in. long by under 2 in. round

above the shortly adnate base. Flowers 10–12 in a cluster, yellowish-white, 2 in. long; pedicels short; bracts lanceolate, hairy, as long as the flowers. Staminode lanceolate. Bahia, *Blanchet*, 2984! Santarem, *Spruce*, 445! Bogota, *Turner*!

11. *H. curtispatha*, Peters. in Fl. Bras. III, pt. 3, 15. Leaves not seen. Panicle pendulous; rachis flexuose, pubescent; branch-bracts ovate, deeply boat-shaped, spaced out on the rachis, glabrous, coriaceous, 2–3 in. long, 2 in. round at the base, the lower only reflexed. Flowers many in a cluster, under 2 in. long; pedicels short; bracts ovate-lanceolate, as long as the flowers, hairy on the back. Panama, *Wagner*; Nicaragua, *Seemann*, 169!
12. *H. rostrata*, Ruiz et Pav. Fl. Peruv. t. 305. Whole plant 6–8 ft. long. Leaves oblong, acute, green and glabrous beneath, subcordate at the base, 2 ft. long. Panicle pendent, a foot long, 6–8 in. broad at the base; rachis very flexuose, finely pubescent; branch-bracts 12–18, ovate, deeply boat-shaped, spaced out, all reflexed, glabrous, bright red with a greenish-yellow margin, 3–4 in. long by 2 in. broad above the base. Flowers many in a cluster, yellowish, 2 in. long; bracts lanceolate, villose. Staminode small, spatulate. Peru, *Pavon*! *McLean*!

Subgenus *Stenochlamys*.

13. *H. dasyantha*, K. Koch et Bouché, Ind. Sem. Hort. Berol. 1854, app. 12; Regel, Gartenfl. t. 198; Peters. Fl. Bras. III, pt. 3, t. 3. Whole plant 5–6 ft. long. Leaves oblong, long-petioled, green and glabrous beneath, reaching a length of 2–3 ft., deltoid at the base. Panicle pendulous, from a long curved peduncle, above a foot long, 6–8 in. broad; rachis flexuose, very hairy; branch-bracts 7–8, lanceolate, shallowly boat-shaped, hairy outside, bright red with a green edge, the lower reflexed, 3–4 in. long, an inch round at the base and middle, the upper shorter, ascending. Flowers few in a cluster, hairy, yellow, 1½ in. long; bracts lanceolate, as long as the flowers. Staminode short, acute. Brazil, in woods at Maribi, *Martius*; French Guiana, *Leprieur*.
14. *H. platystachys*, Baker. Leaves very large, oblong, green and glabrous beneath, 3–4 ft. long, above a foot broad. Panicle

drooping from a short curved peduncle, which is densely clothed with soft bright brown hairs, deltoid, a foot long; rachis scarcely at all flexuose, clothed with hairs like those of the peduncle; branch-bracts few, lanceolate, spaced out on the rachis, arcuate-ascending, slightly pubescent on the back towards the base, the lowest 6-8 in. long, $1\frac{1}{2}$ -2 in. round above the shortly adnate base. Flowers few in a cluster, 2 in. long; pedicels finally an inch long, hairy; bracts lanceolate, as long as the flowers. Santa Marta, *Purdie*! Guatemala, alt. 5000 ft., *Donnell-Smith*, 1873! Intermediate between *dasyantha* and *latispatha*.

15. *H. brasiliensis*, Hook. Exot. Flora, tab. 190; Paxt. Mag. III, 193, with coloured figure; Kerner, Hort. t. 803. Whole plant 6-8 ft. long. Leaves long-petioled, oblong, green and glabrous beneath, 2-3 ft. long by 8-10 in. broad. Peduncle long, stiffly erect. Panicle deltoid, 6-9 in. long; rachis flexuose, pubescent; branch-bracts 8-12, lanceolate-acuminate, bright red to the edge, glabrous, the lower 6-9 in. long, $1-1\frac{1}{2}$ in. round above the base, all arcuate-ascending. Flowers 6-9 in a cluster, dull green, or according to Petersen a handsome red or yellow, 2 in. long; ovary yellow; pedicels finally an inch long; tube very short. Staminode oblong. South Brazil, *Bowie* and *Cunningham*! *Burchell*, 1248! *Glaziou*, 8982! 18554! Banks of the Parana, *Parodi*! Amazon valley, *Trail*, 813! New Granada, *Triana*, 1647!
16. *H. latispatha*, Benth. Bot. Sulphur, 170 (1844); *H. meridensis*, Klotzsch, in Linn. XX, 462 (1847). Whole plant 6-8 ft. long. Leaves oblong, long-petioled, green and glabrous beneath, 2-3 ft. long by nearly a foot broad. Peduncle long, glabrous, erect. Panicle sometimes a foot long; rachis flexuose, nearly glabrous; branch-bracts 7-9, lanceolate-acuminate, all arcuate-ascending, the lowest 8-12 in. long, $1\frac{1}{2}$ in. round at base, often leafy at the top, the upper gradually smaller. Flowers many in a cluster, $1\frac{1}{2}$ -2 in. long; pedicels pubescent. Staminode oblong-cuspidate. Andes of Bogota, *Hartwig*! Salango, Columbia, *Hinds*! Venezuela, *Moritz*, 1287! Panama, *Fendler*, 443! Guatemala, *Donnell-Smith*, 1829! A plant in Herb. Mus. Brit., gathered long ago by Shakespeare, is probably this species.

17. *H. lingulata*, Ruiz et Pav. Fl. Peruv. tab. 304. Whole plant 5-6 ft. long. Leaves oblong, long-petioled, green and glabrous beneath, obliquely cordate at the base, the lower 2-3 ft. long by nearly a foot broad. Peduncle erect. Panicle erect, nearly a foot long; rachis pubescent, but little flexuose; branch-bracts 12-20, all ascending, reddish-yellow, lanceolate, glabrous, the lowest 6-8 in. long, 1 inch broad at the base, $\frac{1}{2}$ in. broad above the middle, not acuminate, as in *latispatha* and *brasiliensis*. Flowers many in a cluster, yellowish; pedicels $\frac{1}{2}$ -1 in. long. Staminode incurved, spatulate. Peru, *Pavon!* *Lechler*, 2679!
18. *H. Schiedeana*, Klotzsch, in Linn. XX, 463; *H. hirsuta*, Cham. et Schlecht. in Linn. VI, 57, non Linn. fil. Leaves long-petioled, oblong, green and glabrous except the pubescent mid-rib beneath and the pubescent petiole, 1-1 $\frac{1}{2}$ ft. long, 6-8 in. broad. Peduncle and panicle erect; branch-bracts about 10, distant, lanceolate, pubescent, 2-3 in. long, under an inch broad; rachis pubescent, slightly flexuose. Flowers many in a cluster; bracts lanceolate; pedicels densely pubescent. Mexico, *Schiede*, 1031. Vera Cruz, Cordoba, &c., *Karwinski*.
19. *H. acuminata*, L. C. Rich. Nova Act. XV, Suppl. t. 11-12. Whole plant 6-8 ft. long. Leaves oblong, long-petioled, green and glabrous beneath, 1 $\frac{1}{2}$ -2 ft. long by 5-6 in. broad at the middle. Peduncle long, slender, stiffly erect. Panicle sometimes a foot long; rachis very flexuose; branch-bracts distant, lanceolate-acuminate, bright red, glabrous, the lowest 6-7 in. long, an inch round at the base. Flowers many in a cluster, 1 $\frac{1}{2}$ in. long, reddish-green; pedicels finally an inch long. French Guiana, *Martin!* British Guiana, *Appun*, 257! *Jenman*, 905! 6373! Venezuela, *Fendler*, 1500! South Brazil, *Sello!* Amazon Valley, *Burchell*, 9860! A Demeraran plant from *Jenman* (473) with fewer and more distant branch-bracts, the lowest 2 $\frac{1}{2}$ -3 in. long is perhaps a variety. The species comes in half-way between *psittacorum* and *brasiliensis*. *H. Ballia*, L. C. Rich. in Act. Soc. Hist. Paris, I (1792) 107, is probably the same species, but the description is very incomplete. It is figured in Madame Mérian's Illustrations of the Metamorphoses of the Insects of Surinam, tab. 54.

20. *H. Burchellii*, Baker. Whole plant 6-8 ft. long. Leaves oblong, green and glabrous beneath, the upper shortly-petioled, the lower $1\frac{1}{2}$ -2 ft. long, 5 in. broad at the middle, rounded to the base. Peduncle long, glabrous, stiffly erect. Panicle subcernuous, $\frac{1}{2}$ ft. long; rachis very flexuose; branch-bracts 7-8, rose-crimson, glabrous, all deflexed, lanceolate, the lower 2 in. long, $\frac{1}{2}$ in. round at the base. Flowers many in a cluster, golden-yellow; pedicels pubescent, $\frac{1}{2}$ in. long. Central Brazil; between Retiro and Rio Grande, *Burchell*, 5623! Differs from *acuminata* and *brasiliensis* by its very small deflexed branch-bracts.
21. *H. densiflora*, B. Verlot, in Rev. Hort. 1869, 274, with coloured figure. Whole plant $1\frac{1}{2}$ -2 ft. long. Leaves long-petioled, oblong, green and glabrous beneath, 4-5 in. broad, conspicuously cordate at the base. Peduncle long, slender, glabrous. Panicle dense, deltoid, $\frac{1}{2}$ ft. long; rachis hidden, but little flexuose; branch-bracts 5-6, lanceolate-acuminate, glabrous, bright scarlet, the lowest 6-7 in. long, $1-1\frac{1}{2}$ in. round at the base, the upper much smaller. Flowers $1\frac{1}{2}$ in. long, bright yellow with a black tip. French Guiana, sent by Melinon to the Jardin des Plantes at Paris about 1869.
22. *H. hirsuta*, Linn. fil. Suppl. 158. Whole plant 3-4 ft. long. Leaves oblong, acute, green and glabrous beneath, without any petiole except the sheath which clasps the stem, $\frac{1}{2}$ -1 ft. long, 3-4 in. broad at the middle, rounded to the base. Peduncle long, erect, hairy. Panicle 3-4 in. long; rachis densely pubescent, flexuose; branch-bracts 6-8, arcuate-ascending, bright red, pubescent outside, lanceolate-acuminate, the lowest the largest, 3-4 in. long, under an inch broad. Flowers 6-12 in a cluster, bright yellow, pubescent outside, $1\frac{1}{2}$ in. long. Staminode obovate-cuspidate.

Var. *H. cannoidea*, L. C. Rich. in Nova Acta, XV, Suppl. tab. 9 and 10, fig. 2; Peters. in Mart. Fl. Bras. III, pt. 3, tab. 8; *H. vaginalis*, Benth. Bot. Sulphur, 171; *H. Richardiana*, Miquel, in Linn. XVIII, 70; *H. Swartziana*, Schult. Syst. Veg. V, 591; *H. psittacorum*, Brit. Mag. t. 502; *H. refracta*, Mart.; *H. bicolor*, Klotzsch, non Benth. Rachis, branch-bracts, pedicels and sepals nearly or quite glabrous. Throughout Tropical

America from Jamaica and Nicaragua to Peru and the South of Brazil.

23. **H. choconiana**, S. Wats. in Proc. Amer. Acad. XXIII, 284; Garden and Forest, 1888, 161, fig. 31. Whole plant 3-4 ft. long. Leaves without any free petiole, linear-oblong, green and glabrous beneath, 6-10 in. long, 2 in. broad, rounded to the base. Panicle subsessile, moderately dense, 3-4 in. long; branch-bracts 5-6, scarlet, glabrous, lanceolate-acuminate, the lowest long and leaf-pointed, the central 2-2½ in. long, not narrowed from the base to the middle. Flowers pale yellow, 2 in. long; pedicels glabrous, ½-¾ in. long. Staminode ovate, abruptly cuspidate. Guatemala; banks of the Chocon river, *Dr. S. Watson*.
24. **H. aurantiaca**, Ghiesb.; Lemaire, in Ill. Hort. tab. 332 (1862); *H. brevispatha*, Hook. in Bot. Mag. tab. 5416 (1863); *H. aurea*, Hort. Whole plant 2-3 ft. long. Leaves oblong, nearly sessile on the sheaths, green and glabrous beneath, the lower 9-12 in. long, 2-3 in. broad, broadly rounded at the base. Peduncle slender, erect, glabrous. Panicle erect, deltoid, 3-4 in. long; branch-bracts 3-4, lanceolate, erecto-patent, the lowest 3-4 in. long, an inch round at the base, orange-red with a green tip, the upper much shorter, entirely red-yellow; rachis but little flexuose. Flowers about 4 in a cluster, greenish-white, 2 in. long; pedicels short, red, glabrous. Staminode obliquely ovate. Forests of Southern Mexico. Introduced into cultivation by Ghiesbreght through Verschaffelt about 1860.
25. **H. angustifolia**, Hook. in Bot. Mag. tab. 4475; *H. bicolor*, Benth. in Maund Bot. tab. 101; Regel, Gartenfl. tab. 172; Horan. Prodr. Scit. tab. 4, non Klotzsch. Whole plant 3-4 ft. long. Leaves petioled, linear-oblong, very acute, cuneate at the base, green and glabrous beneath, the lower 1½-2 ft. long, 2½-3 in. broad. Peduncle erect, glabrous. Panicle deltoid, ½ ft. long; rachis but little flexuose; branch-bracts 6-7, lanceolate-acuminate, bright red to the edge, glabrous, the lowest 5-6 in. long, 1-1½ in. round at the base, the others much shorter. Flowers 8-10 in a cluster, white, above 2 in. long; pedicels short, glabrous, orange-red. Staminode lanceolate. Brazil. Introduced into cultivation about 1846.

26. **H. psittacorum**, Linn. fil. Suppl. 198; Peters. in Mart. Fl. Bras. III, pt. 3, tab. 7, fig. 1; *H. marantifolia*, G. Shaw. Whole plant 2-3 ft. long. Leaves long-petioled, linear-lanceolate, green and glabrous beneath, narrowed to the base, the lower 1-1½ ft. long, 1-2 in. broad at the middle. Peduncle long, slender, glabrous. Panicle deltoid, 3-4 in. long; rachis but little flexuose; branch-bracts 4-5, lanceolate, erecto-patent, bright red, glabrous, the lower 3-4 in. long, under an inch round at the base. Flowers about 6 in a cluster, bright yellow, with a black tip, 1½ in. long; pedicels ½ in. long. Staminode tricuspidate.
- Var. **H. Schomburgkiana**, Klotzsch, in Linn. XX, 465; *H. psittacorum*, var. *spathacea*, Eichl.; Peters. in Fl. Bras. III, pt. 3, tab. 7, fig. 2. Taller and more robust, with broader leaves more rounded at the base, and more numerous larger branch-bracts.
- Var. **H. subulata**, Ruiz et Pav. Fl. Peruv. tab. 303; *H. angusta*, Vell. Fl. Flum. III, t. 20; *H. Andrewsii*, Klotzsch, in Linn. XX, 465 (Andr. Bot. Rep. tab. 124). Still more robust, with leaves 3-3½ in. broad, panicle ½-1 ft. long with a very flexuose rachis and lower branch-bracts 6-9 in. long, an inch round the base. Throughout South America, from the West Indies to Peru and South Brazil.
27. **H. metallica**, Hook. in Bot. Mag. t. 5315. Whole plant 6-8 ft. long. Leaves oblong, long-petioled, narrowed to the base, bright green above, bright claret-purple all over beneath, 1½-2 ft. long, 4-5 in. broad at the middle. Peduncle slender, glabrous, stiffly erect. Panicle about ½ ft. long and broad; rachis but little flexuose; bracts distant, ascending, green, glabrous, lanceolate-acuminate, the lowest much the largest, 4-5 in. long, 2 in. round at the base. Flowers few in a cluster, bright red with a greenish-white tip, 2 in. long; pedicels short. Staminode ovate. Santa Marta, at the foot of the Sierra Nevada, *Schlim*. Introduced into cultivation about 1856. *H. vinosa*, Bull. Cat. 1871, 5 probably belongs here.
28. **H. pulverulenta**, Lindl. in Bot. Reg. t. 1048; Hook. in Bot. Mag. t. 4685. Whole plant 4-6 ft. long. Leaves long-petioled, oblong, the upper 1-1½ ft. long, 4-5 in. broad, cordate at the base, white-farinoso beneath. Peduncle long,

stiffly erect. Panicle deltoid, 6–8 in. long; rachis but little flexuose; branch-bracts about 5, lanceolate-acuminate, erectopatent, glabrous, bright crimson, the lowest 6–9 in. long, $\frac{3}{4}$ in. round at the base, the others much shorter. Flowers many in a cluster, $1\frac{1}{2}$ in. long, greenish-white; pedicels short. Staminode oblong, mucronate. West Indies, probably Dominica, *Hort. Kew.*! South Brazil, *Glaziou*, 1855! Trinidad, *Purdie*! *H. farinosa*, Raddi, and *H. dealbata*, Lodd., probably belong here. Of the former the leaf only is described, Mem. 4, Piant. Nuov. Bras. p. 14 (Modena, 1820).

29. **H. glauca**, Poit.; B. Verlot, in Rev. Hort. 1869, 112, with coloured figure. Whole plant 5–6 feet long. Leaves long-petioled, oblong, deltoid at the base, thinly white-farinoso beneath, $1\frac{1}{2}$ –2 ft. long by 4–5 in. broad at the middle. Peduncle long, stiffly erect, glabrous. Panicle about $\frac{1}{2}$ ft. long by 8–9 in. broad; rachis very flexuose, bright coral-red; branch-bracts about 5, distant, lanceolate, yellowish-green, glabrous, the lowest 5–6 in. long by an inch broad low down, the others shorter, the upper ascending, the central ones portent. Flowers 6–10 in a cluster, yellowish-green; pedicels and ovary bright red, the former $\frac{1}{2}$ –1 in. long. Demerara, *Drake*! Flowered at the Jardin des Plantes at Paris in 1869.

Genus 2. STRELITZIA, Aiton.

Flowers hermaphrodite. *Sepals* lanceolate, subequal, the one opposite the united petals more convex on the back. *Petals* very unequal, two connivent so as to form a saggittate blade in the centre of which is a channel that holds the stamens and style; the third very small, ovate. Perfect *Stamens* 5, as long as the petals; anthers long, linear, 2-celled. Ovary 3-celled; ovules many in a cell, superposed; style long, deeply divided at the apex into three branches. *Capsule* oblong, triquetrous, loculicidally 3-valved. *Seeds* few in a cell, furnished with a woolly arillus.—Acaulescent or caulescent. *Leaves* distichous, with a long petiole deeply channelled down the face and usually an oblong blade. *Peduncle* long or short; branch-bracts deeply boat-shaped, coriaceous, acute, usually single. *Sepals* bright yellow or white. *Petals* usually blue. The genus was named, at the suggestion of Sir Joseph Banks, after Charlotte, the

queen of George III, who was a princess of Mecklenburg-Strelitz.

Acaulescent. Sepals bright yellow . . . : Sp. 1-2.

Caulscent. Sepals white Sp. 3-4.

1. **S. parvifolia**, (Dryand. in) Ait. Hort. Kew. ed. 2, II, 56; Bauer, Strelitz. tab. 11; *S. angustifolia*, Ait. loc. cit. Acaulescent. Petiole slender, reaching a length of 4-6 feet; blade oblong-lanceolate in the type, 8-9 in. long, 3 in. broad at the middle, deltoid at the base, bright green, with a narrow scariose brown edge, in *S. angustifolia* lanceolate. Peduncle about as long as the leaves, with green sheath-leaves; branch-bract 5-6 in. long, 2-3 in. round at the base, green with a reddish edge. Sepals bright orange-yellow, 3-4 in. long. Petals blue; lower with a blade about 2 in. long, with large round basal auricles. Stamens about 3 in. long.

Var. **S. juncea**, Link, Enum. Hort. Berol. I, 15; *S. parvifolia*, var. *juncea*, Bot. Reg. t. 516; Reichb. Fl. Exot. t. 181. Blade of the leaf abortive. Cape Colony: south-western province, *Drège!* *Villette!* *Burchell*, 443873! Introduced into cultivation about 1796.

2. **S. Reginae**, (Banks, in) Ait. Hort. Kew. ed. 1, I, 285, tab. 2. Bauer, Strelitz. tab. 6-9; *S. regalis*, Salisb. Prodr. 145; *Heliconia Bihai*, J. Miller, Ic. tab. 5-6 (1780). Acaulescent. Petiole 3-4 feet long; blade in the type oblong-lanceolate, 1-1½ ft. long, 4 in. broad at the middle, cuneate at the base, crisped on the margin, especially downwards, bright green above, glaucescent beneath. Peduncle as long as the petiole; sheathing leaves green; branch-bract green with a reddish edge, 6-8 in. long, 2-3 in. round at the base. Sepals lanceolate, bright yellow, 3-4 in. long. Petals dark blue; blade of the two lower 1½-2 in. long, with a large round basal auricle; haft half as long as the blade; upper petal small, broad ovate. Stamens as long as the petals; anthers twice as long as the filaments. Style as long as the petals, its branches an inch long.

Var. **S. glauca**, L. C. Rich. in Nova Acta, XV, Suppl. 17, tab. 2-3. Leaves oblong-lanceolate, glaucous. Peduncle not overtopping the leaves.

Var. **S. farinosa**, (Dryand. in) Ait. Hort. Kew. ed. 2, II, 55. Petiole less than twice as long as the blade, which is oblong,

above a foot long, unequal sided and truncate at the base. Peduncle rather longer than the petiole, glaucous. Flowers exactly like those of the type.

Var. *S. ovata* (Dryand. in) Ait. Hort. Kew. ed. 2, II, 55; *S. Reginae*, Curt. Bot. Mag. t. 119-120; Andr. Bot. Rep. t. 432. Petiole and leaf-blade shorter than in the type, the latter rounded or subcordate at the base. Peduncle overtopping the leaves.

Var. *S. humilis*, Link, Enum. Hort. Berol. I, 150; *S. pumila*, Hort. A dwarf form, with petiole twice as long as the ovate concave blade and scape as long as the petiole. Cape Colony; south-western district, *Masson*! *Nelson*! *Burchell*, 3670! *Drège*! *Dr. Gill*! Rocky heights of Uitenhage and district of Albany near the Cowie river, *Bowie*! *S. prolifera*, Rafarin, in Rev. Hort. 1869, 159, fig. 13, is a form with two clusters of flowers; *S. Lemoiniéri*, Meillez, in Flore des Serres, tab. 2370, a form with flowers more brightly coloured than usual and *rutilans*, Morren, in Ann. Gand, II (1846), tab. 53, a form with very dark orange-coloured sepals and leaves with a bright brown mid-rib and margin. Introduced into cultivation in 1773. See Miss North's drawings, No 365.

3. *S. augusta*¹, Thunb. Nov. Gen. 113; Prodr. 45; Bauer, Strelitz. tabs. 1-4; Bot. Mag. t. 4167; Flore des Serres, t. 173-4; *S. alba*, Spreng. *Heliconia alba*, Linn. fil. Suppl. 157. Cauliscent when developed, with a short cylindrical trunk. Petiole reaching a length of 5-6 feet; blade oblong, bright green, deltoid or rounded at the base, reaching a length of 3-4 feet and a breadth of 1½-2 feet. Peduncle much shorter than the petiole. Branch-bract coriaceous, glaucous, claret-red, 8-12 in. long by 3-4 in. round at the base. Sepals lanceolate, white, 5-6 in. long. Petals also white, the two lower with the blades about 3 in. long with small rounded auricles and hafts half as long, dilated gradually towards the base; back petal ovate, an inch long. Stamens as long as the petals; anthers 3 in. long, twice as long as the filaments. Style-cusps 1½-2 in. long. Cape Colony, *Thunberg*, *Drège*; Durban, *Cooper*, 1225; Natal (I presume introduced). See Miss North's drawings,

¹ The name is misprinted *angusta* by Dietrich and others.

Nos. 359, 369, 374, *Krauss!* *Cooper*, 1225! Introduced into cultivation by Masson in 1791; yields a coarse fibre. There is a specimen from Masson's garden, with two clusters of flowers, at South Kensington.

4. **S. Nicolai**, Regel and Korn. in *Gartenfl.* t. 235; *Flore des Serres*, XIII, 121, tab. 1356; Hook. fil. in *Bot. Mag.* t. 7038. Whole plant reaching a height of 25 feet. Leaves like those of *S. augusta*. Branch-bracts a foot long, red-brown, 4-6 in. round at the base. Sepals white, lanceolate, 6-7 in. long, an inch broad. Petals blue, the blade of the lower 3-4 in. long, with a large ovate auricle; back petal orbicular, with a large cusp. Anthers 3-4 in. long, twice as long as the filaments. Style-cusps above 2 in. long. Cape Colony. No exact station is known. It is first known as having been seen in a garden in Madeira in 1849. It flowered at St. Petersburg in 1858, and was named in compliment to the Emperor Nicholas.

Genus 3. RAVENALA, *Adans.*

(*Urania*, Schreb.)

Flowers hermaphrodite. *Sepals* 3, free to the base, lanceolate, convex on the back. *Petals* 3, free, lanceolate, one shorter. Fertile *stamens* 5 or 6, as long as the petals; anthers linear, 2-celled, basifixed. *Ovary* 3-celled; ovules many, superposed; style long, filiform, 6-cleft at the stigmatose apex. *Capsule* oblong-triangular, coriaceous, loculicidally 3-valved. *Seeds* oblong, with a lacerated arillus.—*Trees* with a naked trunk. *Leaves* large, oblong, with a long petiole, dilated into a broad sheath at the base. *Panicle* with many spreading boat-shaped branch-bracts. *Flowers* white, many in a cluster in the axils of the bracts. *Fruit* the size and shape of a small banana, but rigid and not eatable.

Subgenus **Urania**.—Perfect stamens 6.

Subgenus **Phenakospermum**.—Perfect stamens 5.

1. **R. madagascariensis**, Sonner. *Voy. Ind.* II, 223, tabs. 124-126; Jacq. *Hort. Schoen.* tab. 93; *Flore des Serres*, tab. 1355; Belg. *Hort.* IX, 31; *Urania speciosa*, Willd.; *U. Ravenala*, L. C. Rich. *Nova Act.* XV, Suppl. tabs. 4-5. A tree, with a tall naked cylindrical trunk. Leaves 20-30 in a fan-shaped close distichous rosette; petiole very stout, reaching a length of

10–12 feet, with a wide-clasping base, often above a foot round; blade oblong, nearly as long as the petiole, 2 ft. broad. Panicles axillary, much shorter than the petioles, often more than one to a tuft; peduncle short; branch-bracts ovate, acute, coriaceous, deeply boat-shaped, 3–4 in. round at the base, spreading or the lower deflexed. Flowers white, 6–8 in. long. Perfect stamens 6; anthers 3–4 in. long. Stigma shortly lobed. Capsule 3–4 in. long, above an inch in diameter. Seeds in two rows, umbilicate, with a blue pulpy arillus. Madagascar. 'Commonly along the east coast, from sea-level up to 2000 feet, but also found occasionally, small in size, in the forests on the east side of Imerina, from 4000 to 5000 feet above sea-level. Besides good drinking-water, procurable from the base of its petioles, the leaves are used for thatching houses; their midribs, transfixed by long fine twigs, form house-walls and doors; the bark, beaten out flat, forms flooring, and the leaves also are used as plates and spoons. It usually grows in damp soil and always near water. The names are *Ravin-à-la* (forest-leaves), *Akondro-à-la* (forest banana), and *Akondro-hazy* (tree-like banana), because its height in crowded forests is from 90 to 100 feet.' Dr. G. W. Parker, F.L.S. It is frequently planted in tropical Asia and is included in Wallich's great Indian herbarium. Is in Miss North's drawings, Nos. 58, 535, 543.

2. **R. guianensis**, Benth. et Hook. fil. Gen. Plant. III, 657; Peters. in Mart. Fl. Bras. III, pt. 3, tab. 1, fig 3; *Urania guianensis*, L. C. Rich. in Nova Acta, XV, Suppl. tabs. 6–8; *U. amazonica*, Mart.; *Phenakospermum guianense*, Endl.; Miquel, Stirp. Surinam. 213, tabs. 62–63. Naked trunk reaching a height of 20–30 feet. Petiole much shorter than in the other species; blade oblong, 2 feet broad. Panicle with long peduncle 3–6 feet long, overtopping the leaves; branch-bracts 6–8, deeply boat-shaped, spreading, from 1–1½ ft. long. Flowers white; sepals 5–6 in. long; petals about an inch shorter. Perfect stamens 5, as long as the petals; anthers about 2 in. long. Stigma deeply cleft. Seeds in more than two rows; arillus when young yellow. French Guiana, *Sagot*, 578! Dutch Guiana, *Wulschlaegel*. Amazon valley near Para, *Burchell*, 9691!

Genus 4. MUSA, Linn.

Flowers unisexual, only those of the lower clusters producing fruit.

Calyx at first tubular, soon slit down one side, 3-5-toothed at the apex. *Petal* placed opposite the calyx, simple or tricuspidate. Perfect *Stamens* 5; filaments filiform; anthers 2-celled, basifixed; rudiment of sixth stamen present or absent.

Ovary cylindrical, 3-celled: ovules many in a cell, superposed; style filiform from a thickened base; stigma shortly lobed.

Fruit indehiscent, pulpy or dry, oblong or cylindrical. *Seeds* subglobose or angled by pressure, often excavated at the hilum; testa hard, intruded at the base and apex; albumen farinaceous; embryo subtruncate.—Monocarpic shrubs with cylindrical or bottle-shaped trunks, often stoloniferous at the base. *Leaves* large, oblong, entire; free petiole long or short.

Panicle of many clusters of flowers, spaced out on the rachis and each subtended by a large spathaceous scariose bract.

Flowers usually white or yellow.

Key to the sections and species.

Subgenus **Physocaulis**. Stem bottle-shaped. Flowers many to a bract. Petal usually tricuspidate. Fruit not edible.

Tropical African Sp. 1-5.

Indian Sp. 6-7.

Subgenus **Eumusa**. Stem cylindrical. Flowers many to a bract. Petal ovate-acuminate. Bracts green, brown, or dull violet. Fruit usually edible.

Dwarf Sp. 8-10.

Tall (group of *M. sapientum*). Sp. 11-21.

Subgenus **Rhodochlamys**. Stem cylindrical. Flowers few to a bract. Petal linear. Fruit usually not edible. Bracts bright-coloured, often red Sp. 22-32.

Subgenus **Physocaulis**.

1. **M. Ensete**, Gmel. Syst. Nat. II, 567; Hook. in Bot. Mag. t. 5223-4; Rev. Hort. 1861, 124; Flore des Serres, t. 1418; Gard. Chron. 1881, 434, fig. 84; Miss North's drawings, No. 516; *Ensete edule*, Horan. Prodr. 40. Whole plant

30-40 ft. high. Stem ventricose at the base, non-stoloniferous. Leaves oblong, acute, bright green, reaching a length of 20 ft. and a breadth of 3 ft.; petiole short, broad, deeply channelled. Peduncle short; flowering panicle globose; bracts densely imbricated, ovate, 9-12 in. long, dark claret-brown. Flowers whitish, $1\frac{1}{2}$ -2 in. long, arranged in two rows, up to 20 in a row. Ovary cylindrical, above an inch long; calyx lingu- late, 3-lobed at the apex; petal short, tricuspidate, with a large linear central cusp. Sixth stamen rudimentary. Fruit cori- aceous, dry, 2-3 in. long. Seeds 1-4, black, glossy, transversely oblong, nearly an inch broad, with a prominent raised border round the hilum. Mountains of Abyssinia, southward to hills south of the Victoria Nyanza Lake. Niam-Niam land, *Schweinfurth!* Native name, *Ensete*. The pith of the young stems is much used as food by the Gallas and other tribes; also the young heads. For a full account see Bruce's Travels in Abyssinia, vol. vii. p. 149 (figured in his Atlas, tab. 89); Grant, in Trans. Linn. Soc. XXIX, 153, and Duchartre, in Sagot's Monograph, pp. 5-9. Grant's plant from Waganda, with a stem like two great drums placed one upon another, and Heuglin's from Semen, with stolons, will likely prove distinct species. It is the most hardy of all the cultivated species, growing freely in the open air in the Mediterranean region, and flowering freely at Kew in a cool conservatory (Temperate House). The seeds are commonly made into necklaces.

2. *M. ventricosa*, Welw. Apont. 585, No. 45. Not stoloniferous. Whole plant 8-10 ft. long. Stem much swollen, 4 ft. diam. at the base. Leaves oblanceolate-oblong, acute, bright green, 4-5 ft. long, much thicker in texture than in *M. sapientum*, with a pale red midrib; petiole very short and stout. Panicle drooping, dense, oblong-lanceolate, nearly as long as the leaves; peduncle very short and stout; bracts at the base of the spike 1-1 $\frac{1}{2}$ ft. long, lanceolate; those of the fertile clusters oblong, 8-9 in. long, about 3 in. broad; flowers about 15 to a cluster. Fertile flowers 2 in. long; ovary cylindrical, under an inch long. Calyx 3-lobed, longer than the ovary. Petal ovate, entire, not tricuspidate, $\frac{1}{3}$ in. long. Fruit like that of *M. Ensete*. Seeds as large as those of *M. Ensete*, dull black, with a broad hollow at the hilum. Angola; province of Pungo Andongo,

- in rocky places near rivulets, *Welwitsch*, 6447! Differs from all the other species of this section by its entire petals. *M. africana*, Bull. Cat. 1871, 6, is probably this species in a young state.
3. **M. Buchananii**, Baker. Nearly allied to *M. Ensete*, but the bracts linear-oblong, in Buchanan's specimens 1-1½ ft. long, 2½-4 in. broad. Flowers 10 in a row. Ovary cylindrical, above an inch long. Unexpanded calyx cylindrical, as long as the ovary. Seeds as large as those of *M. Ensete*, glossy, black, not tubercled. Shiré highlands, *Buchanan*, 47, of 1885 collection! Sir John Kirk saw the seeds from the Shiré valley, at a height of 2000 ft. above sea-level.
4. **M. Livingstoniana**, Kirk, in Journ. Linn. Soc. IX, 128. Stem conical, twice the height of a man, 2-3 ft. diam. at the base. Leaves narrow oblong, crowded, as long as the trunk, with a short broad-clasping deeply channelled petiole. Fruit many-seeded, 4 in. long. Seeds globose, angled by pressure in the lower half, ⅓ in. diameter, dull brown, tubercled, with a depressed hilum, surrounded by prominent edges. South-east Tropical Africa from 12° to 19° south latitude, ascending to 7000 ft. Known to us only from Sir John Kirk's sketches and notes, and seeds which he brought home. There is a necklace of similar seeds in the Kew Museum, brought by Barter from Sierra Leone.
5. **M. proboscidea**, Oliver, in Hook. Ic. t. 1777. Not stoloniferous. Trunk dilated at the base, reaching 4-5 times the height of a man. Leaves narrow oblong, very large, 3-4 times as long as broad, narrowed to the base; free petiole, short, deeply channelled. Panicle-rachis finally drooping, very much elongated, nearly as long as the trunk; bracts broad ovate, obtuse, about 4 times as long as the flowers; flowers in two close rows of about 12 in a row. Calyx as long as the cylindrical ovary; petal very short, with two orbicular outer lobes and a large linear central cusp. Seeds turbinate, black, glossy, ½ in. long and broad, with only a small hollow at the hilum. Hills of Ukami, about 100 miles inland from Zanzibar. Known only from seeds and four photographs procured by Sir John Kirk.
6. **M. superba**, Roxb. Hort. Beng. 19; Corom. Plants, t. 223; Wright, Ic. t. 2017; Graham, in Bot. Mag. t. 3489-3450; Kerner,

Hort. t. 674. Whole plant reaching a height of 10–12 ft. Trunk much dilated, 7–8 ft. in circumference at the base, narrowed to 3 ft. below the leaves. Leaves oblong, narrowed to the base, bright green on both sides, 5 ft. long, 1½ ft. broad; free petiole very short, deeply channelled. Panicle at first globose, a foot in diameter, finally drooping, a third the length of the trunk; bracts orbicular, dull claret-brown, reaching a foot in length and breadth; flowers in two dense rows of 10–15 each. Ovary white, cylindrical, above an inch long. Calyx whitish, as long as the ovary, formed of three loosely cohering linear segments. Petal short, tricuspidate, with a large linear central cusp. Fruit oblong, subcoriaceous, 3 in. long, 1½ in. diam. Seeds very numerous, subglobose, angled by pressure, $\frac{1}{3}$ – $\frac{1}{2}$ in. diam., smooth, brown. Western Ghats of the Bombay peninsula. Frequent in cultivation: introduced by Dr. J. Anderson to the Calcutta Botanic Garden in 1800. Yields a poor fibre.

7. *M. nepalensis*, Wall. in Roxb. Fl. Ind. edit. Wall. and Carey, II, 492. Trunk short, ovoid, 2 ft. in diameter at the base. Leaves rather smaller than in *M. superba*, and somewhat glaucous. Panicle at first dense, a foot in diameter, finally short, drooping; bracts dull purple, ovate, the lower ½ foot long; flowers 7–8 in a row. Calyx, petal, fruit and seeds like those of *M. superba*. Lower hills of Nepal, in dense shaded forests, *Wallich*. Described principally from two large unpublished drawings of Wallich, now at Kew. Not known in cultivation.

Subgenus *Eumusa*.

8. *M. lasiocarpa*, Franchet, in Journ. de Bot. 1889, 329, with figure. Whole plant 1–2 ft. long. Stems sending out at the base a stout horizontal rhizome. Leaves oblong-lanceolate, about a foot long, very glaucous, narrowed at the base to a petiole which is rather shorter than the blade, the broad truncate bases of the old leaves persisting round the base of the stem. Panicle dense, erect, oblong, under a foot long; bracts thin, yellowish, persistent, the upper ovate, the lower ovate-lanceolate. Flowers 4–8 in a cluster, above an inch long. Calyx 5-lobed. Petal shorter, ovate-oblong. Fruit oblong-trigonous, dry, pubescent,

with 4-6 seeds in each cell, which fill up the whole cavity. Mountains of Yunnan, alt. 4000 ft., *Delavay*. Franchet founds on this curious species a section called *Musella*, characterized by its membranous bracts and by possessing a rhizome.

9. **M. Cavendishii**, Lamb. in Paxt. Mag. III, 51, with coloured figure; Garden, 1891, II, 263; *M. chinensis*, Sweet, Hort. Brit. ed. 2, 596 (name only); Miss North's drawings, Nos. 225, 816; *M. sinensis*, Sagot. Stoloniferous. Whole plant 4-6 ft. high. Stem 2-3 ft. long, 3-4 in. diam. Leaves 6-8 in a dense rosette, spreading, oblong, 2-3 ft. long, about a foot broad, much rounded at the base, rather glaucous; petiole short, stout, deeply channelled, with two broad crisped green edges. Peduncle short, stout. Panicle dense, oblong, 1-2 ft. long, drooping; bracts red-brown or dark brown, ovate, the lower half a foot long, the upper 3-4 in.; male flowers and their bracts persistent. Calyx yellowish-white, an inch long, with 5 rounded lobes. Petal ovate, entire, less than half as long. Fruits as many as 200-250 to a panicle, oblong, 6-angled, slightly curved, 4-5 in. long, above $1\frac{1}{2}$ in. diam., obtuse, narrowed gradually to the sessile base, seedless, edible, with a rather thick skin and delicate fragrant flesh. Seeds not known. Southern China. Introduced into cultivation by Telfair from Mauritius in 1829. The wild seed-bearing form is not yet known. *M. Massoni*, Sagot *Musa* 21 (name only), supposed to be wild at the Gaboon and cultivated in Bourbon, is said to be like *Cavendishii*, but with slightly different fruits.
10. **M. nana**, Lour. Fl. Cochinch. 644. Trunk cylindrical, 5 ft. long, $\frac{1}{2}$ ft. diam. Leaves oblong-ovate, 3 ft. long. Panicle short, recurved. Flowers all fertile. Stamens often 6 or more. Fruit ovate-oblong, edible, seedless. Cochin China, *Loureiro*. Unknown to M. Pierre. It may be a form *M. Cavendishii*, Lamb., with a taller stem and staminate flowers abortive. I know nothing also of *M. Rhinocerotis*, Kurz, in Journ. Agric.-Hort. Soc. Ind. V, 64¹, which is said to be like *M. nana*, but to have the sheaths of all the leaves enveloping one another, persistent bracts and flowers all fertile.
11. **M. glauca**, Roxb. Hort. Beng. 19; Corom. Pl. t. 300. Not

¹ The elaborate paper of Kurz, above cited, was unfortunately cut short by his death, so that the full descriptions of his new species never appeared.

stoloniferous. Trunk cylindrical, 10–12 ft. long, 6–8 in. diam. Leaves oblong-lanceolate, acute, 4–5 ft. long, pale and glaucous, shortly petioled. Panicle drooping from the base; bracts greenish, persistent, the upper ovate, the lower ovate-lanceolate. Flowers 10–20 to a bract. Calyx whitish, about an inch long; segments 3, loosely coherent, linear. Petal small, tricuspidate, with a large linear central cusp. Fruit oblong, 4–5 in. long, $1\frac{1}{2}$ in. diam., truncate at the apex, narrowed gradually to the sessile base. Seeds smooth, globose, nearly black, $\frac{1}{2}$ in. diam. Pegu; introduced to the Calcutta botanical garden by Mr. F. Carey in 1810. This has flowers like *M. superba*, and a cylindrical trunk like *M. sapientum*.

12. **M. discolor**, Horan. Prodr. 41; Vieill. in Ann. Sc. Nat. 1861, 46. Stoloniferous. Stem slender, cylindrical, 6–10 ft. long. Leaves narrow-oblong, smaller and firmer in texture than in *M. sapientum*, rounded at the base, glaucous, tinged with violet or red beneath when young; petiole a foot or more long. Panicle drooping, finally as long as the leaves; bracts reddish, the upper only persisting; male flowers deciduous. Fruit cylindrical, angled, rather curved, umbonate at the apex, rather dry, reddish-violet, very palatable, with a violet pulp, with a rather musky scent. Wild in New Caledonia, according to Vieillard (native name *Colabonte*), and yielding textile fibre, which is used for fish-baskets, &c. It is widely spread in cultivation, and we have a drawing at Kew by Fitch of a plant that flowered there many years ago.
13. **M. Basjoo**, Sieb. et Zucc. (name); Baker, in Bot. Mag. t. 7182; *M. japonica*, Hort. Stoloniferous. Stem cylindrical, 6–9 ft. long, 6–8 in. diam. Leaves oblong, thin, bright green, 6–9 ft. long, $1\frac{1}{2}$ –2 ft. broad, deltoid at the base; petiole stout, about a foot long. Peduncle stout, arcuate, a foot long. Panicle dense, 1–1 $\frac{1}{2}$ ft. long; female clusters 3–4, close, of 12–15 flowers each; bracts oblong, dull brown, the lower 8–12 in. long; male clusters 8–12, their bracts much imbricated, persistent. Calyx whitish, 2 in. long, shortly 5-toothed at the tip. Petal ovate-acuminate, nearly as long as the calyx. Fruit oblong-trigonal, 3 in. long, umbonate at the apex, narrowed gradually to the sessile base. Liu-Kiu archipelago, and cultivated in Southern Japan. Described from a plant that flowered

in the Temperate House at Kew in 1891. It is as hardy as *M. Ensete*, and is grown in Southern Japan for its fibre. *M. Martini*, Rev. Hort. Belg. 1892, 109, fig. 12, has the habit of *M. sapientum*, and is said to be more hardy than *M. Ensete*, with bright rose-red flowers. The leaves are oblong, long-petioled, firm in texture, bright green above, glaucous beneath, with reddish veins. It was brought from the Canary Islands.

14. *M. textilis*, Néé. Ann. Cienc. IV, 123; *M. mindanensis* (Rumph. Amboin. V, 139); Miquel, Fl. Ned. Bat. III, 588; *M. sylvestris*, Colla, Monogr. Musa, 58; *M. Troglodytarum textoria*, Blanco, Fl. Filip. 247, ed. II, 173. Stem cylindrical, green, 20 ft. or more long, stoloniferous from the base. Leaves oblong, deltoid at the base, bright green above, rather glaucous beneath, smaller and firmer in texture than those of *M. sapientum*; petiole a foot long. Panicle drooping, shorter than the leaves; male flowers deciduous; bracts firmer in texture than those of *M. sapientum*, naked and polished outside, not at all pruinose, brown. Female flowers in several laxly-disposed clusters. Fruit green, oblong-trigonous, curved, 2-3 in. long, 1 in. diam., not narrowed to the apex, but narrowed to the short stout pedicel, not edible, but filled with seed. Seeds black, turbinate, $\frac{1}{8}$ in. diam., angled by pressure.

Var. *M. amboinensis* (Rumph. Amboin. V, 139); Miquel, loc. cit. Stem not so tall. Panicle not so drooping. Fruit as long as a man's finger, black at maturity. The type (*Vidal*, 3943!) plentiful in the Philippine Islands, where it is called *Abaca*, and ascends the mountains to the lower limit of *Pinus insularis*, and is largely used in the manufacture of Manilla hemp, for information about which reference may be made to the Kew Bulletin for April, 1887. It is the most important of all cordage fibres, and the annual export from the Philippines to Britain is 170,000 bales, and to the United States 160,000 bales, equal to about 50,000 tons per annum. It was introduced into cultivation in India in 1811 by Dr. Fleming. As cultivated in the Peradeniya Botanic Garden it has thinner leaves more rounded at the base than the wild plant. Var. *amboinensis* in Amboyna.

15. *M. sapientum*, Linn. Sp. Plant. 1477; Trew, Ehret. t. 21-23; Rheede, Hort. Malabar. I, 17, t. 12-14; *M. sativa* seu *domes-*

tica, Rumph. Amboin. V, 130, t. 60; *M. paradisiaca*, Van Hooten, Fleurs Java, t. 30. Stem cylindrical, usually green, reaching a length of 20-25 ft., 4-6 in. diam., stoloniferous from the base. Leaves oblong, thin, bright green, 5-8 ft. long, $1\frac{1}{2}$ -2 ft. broad, usually rounded at the base; petiole 1- $1\frac{1}{2}$ ft. long. Panicle drooping, often 4-5 ft. long; male flowers deciduous; bracts lanceolate or oblong-lanceolate, dull violet, more or less glaucous outside, the lower 1- $1\frac{1}{2}$ ft. long, the upper $\frac{1}{2}$ ft., often red inside, several expanded at once, the edges of the upper not involute. Flowers about a dozen to a cluster, yellowish-white, $1\frac{1}{2}$ in. long; calyx 5-toothed at the top; petal ovate, half as long as the calyx. Fruits oblong-triangular, 3-4 in. long, $1\frac{1}{2}$ -2 diam., forming 3 or 4 bundles of a dozen each, rounded to the apex, narrowed gradually to the sessile base, bright yellow when ripe, the flesh fit to eat without cooking. Universally cultivated throughout the tropical zone of both hemispheres for the sake of its fruit, and yielding also a fibre, which is much inferior in tenacity to that of *M. textilis*. The following are its subspecies and principal varieties, to which Latin names have been given, viz. :—

Var. *M. violacea*, Hort. Stem, fruit, and also often leaves beneath more or less tinged with violet.

Var. *M. sanguinea*, Welw. Leaves and fruit strongly tinged with blood-red.

Var. *M. odorata*, Lour. Fl. Cochinch. 644. Fruit delicate and fragrant.

Var. *M. mensaria*, Rumph. Amboin. V, 131. Fruit very palatable, subglobose, as large as an apple; flesh soft yellow; skin peeling away easily. Malay name *Pissang Medji*. Ripens early and soon decays.

Var. *M. regia*, Rumph. Amboin. V, 131. Fruit as long as a man's finger, an inch thick, very sweet and delicate in taste. Malay name *Pissang Radji*. Nearly allied to this is the *Gingeli* of Bourbon.

Var. *M. oleracea*, Vieill. in Ann. Sc. Nat. 1861, 46. A flowerless form, with a glaucous violet stem and an elongated thick turnip-like rhizome, which is boiled or roasted like a yam, which it resembles in taste. New Caledonia. Native name *Poiete*.

Var. **M. Champa**, Hort. Stem and midrib of the leaf red. Fruit pale straw-yellow, about 6 in. long, very luscious and delicate in flavour.

Var. **M. martabanica**, Hort. Fruit as in *Champa*, but midrib of leaf not red; border of petiole red-brown.

Var. **M. Dacca**, Horan. Prodr. 41. Stem pruinose. Leaves paler-green than in the type, glaucous beneath; border of the petiole red. Fruit 4 in. long by half as broad, remaining tightly on the branch, its tip and stalk bright green; skin very thick. One of the common Indian forms.

Var. **M. rubra**, Firminger, non Wallich. Stem, petiole, flowers and midrib of leaf dull red. Fruit about 7 in. long, at first dark red, ripening to yellowish red. Indian name *Ram-Kela*.

Var. **vittata**, Hook. in Bot. Mag. t. 5402; *M. vittata*, Ackerm. in Flore des Serres, t. 1510-1513. Leaves and long fruits copiously striped with white. Spathes bright red inside. Imported from the island of St. Thomas, West Africa.

Subsp. 2. **M. paradisiaca**, Linn. Sp. Plant. 1477; Trew, Ehret. t. 18-20; Red Lil. t. 443-4; Tussac, Fl. Antill. t. 1-2; Rich. in Nova Acta, XV, Suppl. t. 1; *M. Cliffortiana*, Linn. Mus. Cliff. I, t. 1. Male flowers and bracts less deciduous. Fruit cylindrical, $\frac{1}{2}$ -1 ft. long, with firmer and less saccharine pulp, not fit to eat without cooking. Cultivated universally in the tropical zone.

Subsp. 3. **M. seminifera**, Lour. Fl. Cochinch. 644; *M. sapientum*, Roxb. Corom. Pl. t. 275; *M. sapientum* and *Troglo-dytarum*, Gaertn. Fruct. t. 11; *M. balbisiana*, Colla, Monogr. Musa, 56 (Rumph. Amboin. t. 60, fig. 3). Fruits small, oblong, full of seeds, not eatable, yellowish or greenish.

These names and figures apparently represent the wild seed-bearing form of *M. sapientum*, and if so it extends in a wild state from Behar and the Eastern Himalayas to the Philippine and Malay isles. The Chittagong plant figured by Roxburgh grows in very soft soil and has tall lanky stems. Kurz, in Journ. Afric. Hort. Soc. Ind. V, 164, distinguishes two species, *M. sapientum*, with spathes often crimson inside, seeds turbinate-globular to polyhedrous, tubercled, not above $\frac{1}{6}$ in. diam. and *M. sikkimensis*, with dull purple spathes and seeds de-

pressed and irregularly angled, tubercled, 4-5 lines diam. Of the latter we have careful sketches made on the spot by Sir J. D. Hooker and it has been widely distributed as *Musa* No. 5 of Hooker, and Thomson's Indian plants. Pierre, in Sagot's monograph, describes in detail three forms from Cochin China. *M. zebrina*, Flore des Serres, t. 1061-2, is, apparently, a dwarf form of this subspecies, with leaves copiously blotched with black.

Dr. King distinguishes four wild seminiferous forms in Sikkim as follows, viz. :—

1. *pruinosa* (*Reling* of the Lepchas). Stem 10-25 ft. long. Leaves very glaucous beneath, bracts deep violet purple, glaucous outside, red inside, persistent, subtending the fruit; fruit about 5 in. long by 1½ in. diam., permanently angled, seeds ¼ in. diam., pulp very scanty. Altitude 1500-3500 feet.

2. *dubia* (*Luxon* of the Lepchas). Stem shorter, leaves not glaucous beneath, bracts deep lurid purple not glaucous outside, purplish-red inside, lower bracts deciduous; fruit 3-4 in. long, 1-1½ in. diam. with 5-6 prominent ribs, seeds ¼-½ in. diam., pulp more copious. Altitude 1500-5500 feet.

3. *Hookeri* (*Tiang-moo-foo-goon* of the Lepchas). Stem 10-14 ft. long, tinged with red, leaves bright green on both sides, tinged with purple when young, bracts purple on both sides, glaucous outside, lower deciduous; fruits 5-6 in. long 2 in. diam., prominently angled; seeds 4-5 in. diam., pulp scanty. Common between 4500 and 5500 feet.

4. *Thomsoni* (*Kergel* of the Lepchas). Stem green, 12-15 ft. long, leaves glaucous only when young, conspicuously cuspidated at the apex, bracts ovate, outside with vertical streaks of yellow and purplish-brown, yellow inside; fruit 2½ in. long, ¾ in. diam. faintly ribbed; seeds few, black, soft, ½ in. diam. surrounded by copious sweet pulp. Does not rise above 1500 feet.

Dr. King thinks the two latter forms as likely to be distinct specifically from *sapientum*. His *Hookeri* is probably *M. sikkimensis*, Kurz.

Subsp. 4. *M. Troglodytarum*, Linn. Sp. Plant. 1478; *M. Uranoscopos*, Rumph. Amboin. V, 137, t. 61, fig. 2. Fruits

small, crowded on the erect axis of the panicle, obovoid-oblong or nearly round, reddish-yellow, containing rudimentary seeds. Flesh sweet, yellow. Wild in India, Ceylon and the Malay isles, the favourite food of elephants. The above names have often been applied to forms of other species than *sapientum*, with a similar habit, such as *M. Fehi*.

For fuller information about the cultivated Bananas reference may be made to Rumph. Amboin. V, 125-137; Blanco, Fl. Filip. p. 239-246; Firminger's Manual of Gardening in India, ed. 3, p. 177; Bojer's Hortus Mauritianus, p. 331; Sagot, in Journ. Soc. Nat. Hortic. France, pp. 238-285; and Kurz, in Journ. Agric.-Hort. Soc. Ind. N. S. V, pp. 112-163.

I know nothing definite about *M. arakanensis*, Ripley, in Proc. Agric.-Hort. Soc. Ind. X, 51, a form yielding excellent fruit and fibre of poor quality.

There are wild, seed-bearing Bananas in the Solomon Islands, *Guppy!* and Timor Laut, *H. O. Forbes!* for the exact determination of which fuller material is needed.

16. **M. acuminata**, Colla, Monogr. Musa, 66; *M. simiarum* (Rumph. Amboin. 138, tab. 61, fig. 1); Miquel, Fl. Ned. Bat. V, 589; Kurz, in Journ. Agric.-Hort. Soc. Ind. XIV, 297; *M. Rumphiana*, Kurz, in Journ. Agric.-Hort. Soc. Ind. V, 164. Stem long, cylindrical, stoloniferous at the base. Leaves oblong, 5-6 ft. long, glaucous beneath, deltoid at the base, firmer than those of *M. sapientum*; petiole 1-1½ ft. long, almost without any membranous edge. Panicle drooping, shorter than the leaves; male flowers deciduous; bracts lanceolate or oblong-lanceolate, violet, only one of those of the female flowers, opened at once and revolute, those of the male clusters involute at the edge. Calyx white or yellowish, 1-1½ in. long; petal ovate-acuminate, nearly as long as the calyx. Fruits in 4-6 clusters of 10-12 each, oblong, rostrate, 2-4 in. long, 1-1½ in. diam.; skin not easily peeled off; flesh sweet. Seeds dull black, angled by pressure, ⅓ in. diam. Common in Java and the other Malay islands, extending eastward to New Guinea. Kurz, who has studied this species carefully on the spot, says that a large proportion of the Bananas which are cultivated in the Malay archipelago are derived from it and that its best varieties are superior to all

those derived from *M. sapientum*, in quality and delicacy. Typical *M. acuminata* is wild and has fruits full of seed. From this several seedless cultivated varieties are immediately derived, differing in the colour of the leaves and fruit. They all have the leaves glaucous beneath, and in one form the waxy bloom is so copious that torches are made from it. Var. *violacea*, Kurz, has stems, leaves and flowers more or less tinged with dark purple, and purple 3-5-angled fruits with a thick beak. Its native name is *Peesang teembaya* or *Peesang hoorang* (Copper, or crab plantain). Var. *culla*, Kurz, is larger in all its parts, with much larger whitish or yellowish flowers and longer cylindrical or angled yellow or greenish seedless fruits. Of this there are 48 distinguishable varieties, of which the most curious is the Duck Plantain (*Peesang moolook bebbek*), the fruit of which has a beak nearly as long as its body. There is a fine series of these forms dried by Kurz from the Buitenzorg garden in the Calcutta herbarium and I refer here *M. paradisiaca*, Zollinger, Pl. Jav. Exsic. No. 3530. Probably *M. Berterii*, Colla, Monogr. Musa, 57; *M. aphurica* (Rumph. Amboin. V, 138, tab. 61, fig. 3), Miquel, Fl. Ned. Bat. III, 589, which has green and leaf-like lower bracts and pale yellow ripe fruit a span long, is a variety of this species. I know nothing of *M. Karang*, Kurz, in Journ. Agric.-Hort. Soc. Ind. V, 164, of which the fruits are said to be angular, short, and thick-beaked, and the bracts yellow inside.

A plant collected in the Andaman Islands by Kurz, with long-stalked rostrate fruits full of seed not more than an inch long including the beak, $\frac{1}{4}$ in. diam. when dried, and two numbers of his Burmese collection (Pegu, Yomah, 3282, 3283), with distinctly rostrate fruits full of seed, 2-2 $\frac{1}{2}$ in. long without any angles when ripe, may be forms of *M. acuminata*, but require further study in a living state.

17. *M. corniculata* (Rumph. Amboin. V, 130), Lour. Fl. Cochinch. 644; Kurz, in Journ. Agric.-Hort. Soc. Ind. V, 161, 166, tabs. 2-4. Stem cylindrical, 10-12 ft. long, as thick as the human thigh. Leaves oblong, green, 5-6 ft. long; petiole 1-1 $\frac{1}{2}$ ft. long. Panicle drooping, only the 2-3, rarely 4 lower bracts and flower-whorls developed, the former oblong-lanceolate, a foot long. Calyx deeply 5-toothed. Petal ovate-

acuminate, nearly as long as the calyx. Fruit cylindrical, a foot or more long, $1\frac{1}{2}$ – $2\frac{1}{2}$ in. diam., narrowed gradually to the apex and sessile base, golden-yellow when ripe; skin thick; pulp reddish-white, firm, dry, sweet, very palatable when cooked. Malay isles and Cochin China. Kurz (loc. cit.) compares the fruit to a cucumber as regards shape and size and describes five varieties, but considers it to be probably only an extreme form of *M. acuminata*. A curious form is the Lubang variety, of which the stem is said to produce only a single fruit, large enough for a full meal for three men.

18. **M. Hillii**, F. Muell. Fragm. IX, 169, 190. Not stoloniferous. Stem cylindrical, very robust, reaching a height of 30 ft. and a diameter of $1\frac{1}{2}$ ft. Leaves oblong, arcuate, bright green, similar to those of *M. sapientum* in colour and texture, reaching a length of 12–15 ft. and a breadth of 2 ft. Peduncle 3 in. diam. Panicle dense, erect; bracts oblong or oblong-lanceolate, 3–9 in. long. Flowers not numerous in a cluster. Calyx about an inch long. Fruits densely crowded, not edible, sessile, ovoid, much angled, $2-2\frac{1}{2}$ in. long, umbonate or obtusely acuminate at the apex. Seeds numerous, angled, much depressed, $\frac{1}{5}-\frac{1}{3}$ in. diam., with a bony testa. Queensland: banks of the Daintree river, with the two other species, *Fitzalan*. We have a plant now in the Palm-house at Kew which has not yet flowered. In habit it resembles *M. Troglodytarum*, Linn. No doubt this is *M. Jackeyi*, Kurz, in Journ. Agric.-Hort. Soc. Ind. N. S. V, 64.
19. **M. Fitzalani**, F. Muell. Fragm. IX, 188. Stem cylindrical, 20 ft. long. Leaves patent, oblong, 10–12 ft. long by 2 ft. broad. Panicle drooping. Flowers 7–10 to a bract; upper bracts ovate or oblong, 2–3 in. long. Calyx nearly an inch long. Fruits oblong, angled, yellow when ripe, not pulpy, 2–3 in. long, narrowed suddenly to a thick pedicel about $\frac{1}{2}$ in. long. Seeds numerous, filling the cells, angular, depressed, scarcely $\frac{1}{5}$ in. in diam. Queensland: banks of the Daintree river, *Fitzalan*. *M. Charlioi*, Walter Hill, in Report of the Brisbane Garden, 1874, is said to have stems 40–50 ft. long, leaves 5–6 ft. long, and fruits 3–4 in. long.
20. **M. Banksii**, F. Muell. Fragm. IV, 132; Benth. Fl. Austral. VI, 261; *M. Banksiana*, Kurz, in Journ. Agric.-Hort. Soc. Ind.

N. S. V, 64. Stoloniferous, with a cylindrical trunk, like that of *M. sapientum*. Leaves oblong, 5-6 ft. long, 1½-2 ft. broad, bright green; petiole 1½-2 ft. long. Panicle drooping; upper bracts oblong, 3-4 in. long, lower much longer. Flowers 10-20 to a bract. Calyx 1-1¼ in. long, shortly 5-lobed; outer lobes lanceolate, inner shorter, oblong. Petal ovate-lanceolate, ½ in. long. Fruits quite cylindrical when dry, without any angle, straight, coriaceous, under an inch in diameter, obtuse at the apex, narrowed suddenly to a slender stipe 1½-2 in. long. Seeds grey, subglobose, ⅓ in. diam., angled in the lower half. Queensland: Mount Elliot, Rockingham Bay, &c., *Herb. F. Mueller!* Very like *sapientum* in stem and leaf, but totally different in fruit. It yields a fibre of poor quality.

21. **M. Fehi** (Bertero), Vieill. in Ann. Sc. Nat. 1861, 46; *M. Fei*, Nadeaud, Fl. Tahiti (1873), 39. Stoloniferous. Trunk cylindrical, 15-20 ft. long, greenish, full of violet juice. Leaves larger and firmer in texture than in *M. sapientum* and *paradisica*, with stouter veins; midrib green; base unequally rounded; petiole 1-1½ ft. long. Panicle long, erect, slightly curved only at the base. Flowers 6-8 in a cluster, sessile. Calyx with 5 unequal lobes, split finally nearly to the base. Petal short. Fruits many in a bunch, oblong, angled, 5-6 in. long by above an inch in diameter, nearly straight, yellow when ripe, with a thick skin and moderately firm pulp, not very palatable when raw, but excellent when cooked. Seeds small, dull black. Common in the forests of Tahiti, where it is largely used for food, seedless at the low levels, but bearing seeds at an altitude of 3000-3600 feet. Native name *Fei*. Found also sparingly by Vieillard in New Caledonia. Native name *Daak*. We have a young plant at the present time in the Kew collection. Probably the Fijian *M. Seemanni*, F. Muell. Fragm. IX, 190 (name only), of which a photograph, sent by Sir John Thurston, is reproduced Gard. Chron. 1890, II, 162, fig. 28, is the same species. This is *M. Uranoscopos*, Seem. Fl. Vit. 290, and *M. Troglodytarum*, Kurz, in Journ. Agric.-Hort. Soc. Ind. N. S. V, 163, in part. We have also leaves from the Rev. T. Powell of a plant from Samoa called *Laufoo* which probably belongs here.

Subgenus *Rhodochlamys*.

22. *M. maculata*, Jacq. Hort. Schoen. t. 446; Kerner, Hort. t. 667. Stem slender, cylindrical, 7-8 ft. long. Leaves oblong, obtuse, deltoid at the base, green above, glaucous beneath, $2\frac{1}{2}$ ft. long, 6-8 in. broad; petiole $\frac{1}{2}$ ft. long. Panicle drooping from above the base; male flowers deciduous; spathes yellowish-brown, the upper oblong, 3-4 in. long; flowers about 4 in a cluster. Calyx yellowish-white, above an inch long, 5-toothed at the apex: petal linear, obtuse, entire, nearly as long as the calyx. Fruit oblong, 2-3 in. long, 1 in. diam., narrowed gradually to the sessile base and apex, yellow, spotted with brown, eatable, aromatic; flesh, white. Known only as cultivated in Mauritius and Bourbon, where it is called *Figue mignonne*. Differs from the other species of this section by its eatable fruit.
23. *M. sumatrana*, Beccari, Cat. Hort. Flor. II, 4; André, in Ill. Hort. N. S. t. 375. Whole plant 7-8 ft. long. Stem slender, cylindrical. Leaves oblong, 5-6 ft. long, $1\frac{1}{2}$ ft. broad, glaucous, with irregular blotches of claret-brown, rounded at the base; petiole slender, a foot long. Peduncle hairy. Panicle more or less drooping; male flowers deciduous; upper spathes small, orbicular, densely imbricated (colour not known); fertile portion consisting of about six clusters of four fruits each spaced out on a flexuose rachis above a foot long. Flowers an inch long. Calyx 5-toothed at the apex; petal linear, obtuse, nearly as long as the calyx. Dried fruits cylindrical, curved, 2-3 in. long, $\frac{1}{2}$ in. diam., narrowed suddenly to a slender stipe $\frac{1}{2}$ -1 in. long. Sumatra; province of Padang, alt. 1100 feet, *Beccari*, 489! Our specimen in flower is from the Poona Botanic Garden, sent by Mr. G. M. Woodrow. Its affinity is evidently with *M. rosacea*, Jacq.
24. *M. rosacea*, Jacq. Fragm. t. 132, fig. 4; Hort. Schoen. t. 445; Bot. Reg. t. 706; Lodd. Bot. Cab. t. 615; *M. ornata*, Roxb. Hort. Beng. 19; Fl. Ind. I, 666; *M. speciosa*, Tenore; *M. Carolinae*, Sterler. Stoloniferous. Stem cylindrical, 3-5 ft. long, 3-4 in. diam. Leaves linear-oblong, 3 ft. long, under a foot broad, tinged with purple beneath; petiole long and slender. Panicle drooping or erect, finally a foot long; bracts ovate-lanceolate, pale blue or reddish-lilac, the lower 6-8 in.

long, the upper oblong, about 3 in. long, edges involute; female flowers in few clusters, 3-4 flowers in each; male clusters very numerous, most of the bracts falling. Calyx yellow, an inch long, 5-toothed at the apex; petal linear, obtuse, nearly as long as the calyx. Fruit oblong, obscurely 4-5-angled, yellowish-green when ripe, 2-3 in. long, but little pulpy, scarcely edible. Seeds $\frac{1}{8}$ in. diam., black, tubercled, angled by pressure, rarely produced in the cultivated plant. Eastern Himalayas and hills of the Concan. It flowered at Kew in Oct. 1881 and June 1890, and we have a specimen collected in the hill-tracts of Chittagong by Mr. J. S. Gamble in Feb. 1880. It was introduced into Europe from Mauritius about 1805.

25. *M. salaccensis*, Zolling. Pl. Exsic. Jav. No. 1353; Kurz, in Journ. Agric.-Hort. Soc. Ind. XIV, 301. Stem slender, cylindrical. Leaves thin, oblong, green on both sides, 2 ft. long, 8-9 in. broad at the middle, cuneate at the base; petiole short. Panicle drooping, a foot long; nodes very numerous and crowded; flowers greenish, 2-3 to a cluster; bracts pale lilac, upper oblanceolate-oblong, obtuse, 2-3 in. long. Calyx above an inch long; petal linear, as long as the calyx. Fruit oblong, full of seed, 3 in. long, under 1 in. diam. when dried, narrowed gradually to a short stout pedicel. Seeds dull brown, angled by pressure, $\frac{1}{8}$ in. diam. Mountains of Java and Sumatra. Described from specimens in the Calcutta herbarium, dried by Kurz from the Buitenzorg Garden. Nearly allied to *M. rosacea*.
26. *M. coccinea*, Andr. Bot. Rep. t. 47; Red. Lil. t. 307-8; Ker, in Bot. Mag. t. 1559; Peters. in Mart. Fl. Bras. III, pt. 3, t. 1; Van Hooten, Fleurs Java, t. 39; Miss North's drawings, No. 696; *M. Uranoscopos*, Lour. Fl. Cochinch. 645, excl. syn. Rumph. Stem stoloniferous, slender, finally 4-5 ft. long, 2-3 in. diam. Leaves oblong, 2-3 ft. long, 6-9 in. broad; petiole long, slender. Peduncle erect. Panicle dense, erect, finally half a foot long, with few clusters of female flowers with 3-4 flowers in each; bracts bright red or tipped with yellow, the lower lanceolate, $\frac{1}{2}$ ft. long, the upper oblong, about 3 in. long. Flowers yellow, an inch or more long. Calyx 5-toothed at the tip; petal linear, obtuse, nearly as long as the calyx. Fruit

- oblong-trigonus, yellow, not edible, 2 in. long. Seeds very small, oblong, rarely produced in cultivation. Southern China and Cochin-China. Introduced into cultivation in 1791, and now widely spread. It yields a fibre of poor quality.
27. *M. rosea*, Herb. Hort. Bot. Calcutt. Habit of *M. coccinea*, but leaves much shorter and broader in proportion to length, thin, green, about a foot long by half as broad, deltoid at the base and apex; petiole deeply channelled, nearly as long as the blade. Panicle short, erect; rachis pubescent, not flexuose; bracts pale red; lower lanceolate, half a foot long; upper oblong, obtuse, about 2 in. long; flowers 2-3 in a cluster. Calyx an inch long; petal as long as the calyx. Fruit and seeds not seen. Described from two specimens in the Calcutta Herbarium, dried from the Botanic Garden in June 1882.
28. *M. rubra*, Wall.; Kurz, in Journ. Agric.-Hort. Soc. Ind. XIV, 301. Habit of *M. coccinea*. Leaves oblong-lanceolate, 1½-2 ft. long, 6-9 in. broad at the middle, acute, deltoid at the base; petiole slender, a foot long. Peduncle and panicle erect, the latter at first dense, the fruiting part finally ½-1 ft. long; nodes very numerous and crowded; bracts bright red, glabrous; lower sterile, lanceolate, a foot long; upper oblong, 3-4 in. long. Calyx yellow, an inch long, 5-toothed at the tip; petal lanceolate, half as long as the calyx. Fruits in 3-4 clusters of 3-4 each, cylindrical, glabrous, dry, 1½-2 in. long, ½ in. diam., narrowed to the base in a distinct short stipe. Seeds smooth, dull brown, ⅓ in. diam. Rangoon, *M'Clelland!* Yomah, Pegu, *Kurz*, 3282! 3283! Differs from *M. coccinea* by its short petal.
29. *M. sanguinea*, Hook. fil. in Bot. Mag. t. 5975. Stem very slender, 4-5 ft. long. Leaves oblong, 2-3 ft. long, thin, bright green, rounded at the base; petiole slender, a foot long. Panicle erect, or finally drooping; female clusters 2-6, with 2-3 flowers in each; male clusters few, dense; bracts bright red, the lower lanceolate, ½ ft. long, the upper persistent, lanceolate, 3-4 in.; rachis stout, pubescent. Calyx bright yellow, 5-toothed at the apex, 1½ in. long; petal linear, obtuse, nearly as long as the calyx. Fruit oblong-trigonus, 2 in. long, rather pulpy, pale yellow-green variegated with red, glabrous. Seeds angled by pressure, small, black, tubercled. Assam; Mahuni

forest, *Mann!* Introduced into cultivation in 1872. *M. assamica*, Hort. Bull is allied plants, at present imperfectly known, which may prove to be distinct.

30. *M. Mannii*, Wendl. MSS. Stem slender, cylindrical, 2 ft. long, 1 in. diam., tinged with black. Leaves few, spreading; petiole 6-10 in. long; blade oblong, green, unequally rounded at the base, 2-2½ ft. long, 9-10 in. broad. Peduncle with spike erect, ½ ft. long; female flowers in three clusters of three flowers each, their bracts deciduous; male bracts crowded, oblong, pale crimson, 3-4 in. long. Calyx pale yellow, 1½ in. long; petal much shorter, truncate. Assam. Described from a specimen that flowered in the palm-house at Kew, March 1893.
31. *M. velutina*, Wendl. and Drude, in Regel, Gartenfl. 1875, 65, t. 823; *M. dasycarpa*, Kurz, in Journ. Agric.-Hort. Soc. Ind. XIV, 381. Habit of *M. sanguinea*. Leaves oblong, unequal at the base, narrowed into the long petiole. Panicle short, dense, erect; bracts bright red, pubescent on the outside; lowest sterile, lanceolate; upper oblong-lanceolate, 5-6 in. long. Fertile flowers about 3 clusters 3-4 in each; male clusters 6-9-flowered. Calyx pale yellow, 1-1¼ in. long, 5-toothed at the apex; petal as long as the calyx, entire, obtuse. Fruit velvety, bright red. Throughout the forests of Assam, *Mann*. Introduced into cultivation in 1875. Differs from *sanguinea* and *aurantiaca* by its red pubescent fruit.
32. *M. aurantiaca*, Mann, Herb. Habit of *M. sanguinea*, but forming larger clumps of rather shorter stems. Panicle moderately dense, finally 8-9 in. long; rachis glabrous; bracts bright orange-yellow, glabrous; lowest sterile, lanceolate, a foot long; upper oblong-lanceolate, persistent, 3-4 in. long; female flowers in 4-5 clusters of 2-4 each. Calyx yellow, above an inch long, 5-toothed at the tip; petal linear, obtuse, as long as the calyx. Fruit green, glabrous. Forests of Upper Assam, *Mann!* Differs mainly from *M. sanguinea* by its orange-coloured bracts.